

telephony

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TOP NEWS: Japan passes three bills to privatize NTT, p.13
Cover: Review and forecast reveals big spending plans, p.34

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\$23.6 billion



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VOLUME 208
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telephony

News of the Week 13

- Japan's House votes to privatize NTT
- USTA group to study capital recovery
- Rochester Tel files for rate increase

34 COVER STORY: Review and forecast

This article focuses on the 1985 equipment and construction forecasts of the U.S. telecom industry within the context of the years 1981-1986
Del Myers and Czatdana Inan

Talks set for Japanese telecom trade 16
In the Nation's Capital: Fastest growth seen in international arena • Washington Round-Up
Victor Block

58 According to the executives
Top executives from many telecom carriers share their views on the state of the industry

More, judge, more 31
Judge Greene's ruling, which allows six RBOCs to enter competitive markets, will allow real competition in the telecom market

88 NTCA preview
NTCA is gearing up for its annual meeting to be held Feb. 16-21 in Dallas. Here's a look at what activities are planned
David R. Roland

DEPARTMENTS

Advertisers' Index 127
Helpful Literature 128
in the Nation's Capital 16
Meetings 11

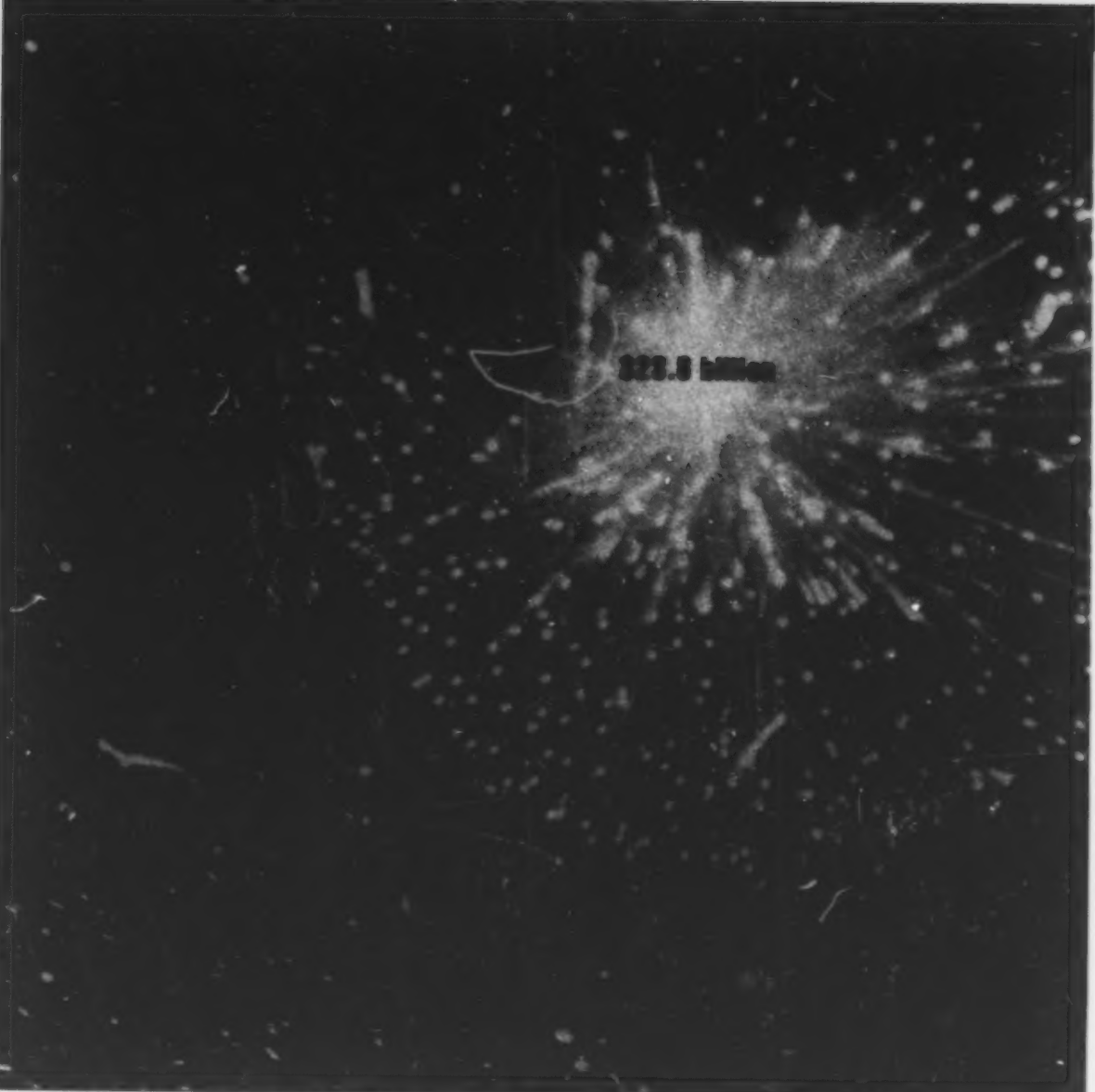
110 Moving Around Industry
96 New Products and Services
13 News of the Week
94 Plant Man's Notebook

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\$23.6 billion

Cover photo by Del Myers

One year after the divestiture of AT&T, U.S. telecommunications carriers are planning to spend \$23.634 billion this year. It will be an extremely busy year.

Telecommunications carriers to spend **\$23.634 billion** in 1985

DEL MYERS, EDITOR, and
CZATDANA INAN, MARKET RESEARCH DIRECTOR

TELEPHONY/January 14, 1985

Table 1
U.S. carrier construction expenditures (\$000,000)

	RBOCs*	Independents	Interexchange Carriers	Total
1986	14,287	5,738	4,080	24,105
1985	14,177	5,439	4,018	23,634
1984	13,053	4,954	3,720	21,727
1983	12,506	5,128	2,600	20,234
1982	13,613	4,986	2,000	20,599
1981	13,502	5,091	1,700	20,293

* RBOCs 1981-1983 construction budgets are adjusted to reflect divestiture.

UNITED STATES telecommunications carriers are planning equipment and construction expenditures of \$23.634 billion in 1985, an increase of \$1.907 billion over their actual spending levels in 1984 (Table 1).

Of the forecast amount, the regional Bell operating companies (RBOCs) will spend \$14.177 billion; the Independents, \$5.439 billion and the interexchange carriers, \$4.018 billion.

Correlating the 1985 forecast with TELEPHONY's 1984 (Jan. 16, 1984, p. 34) forecast of \$30.82 billion "for a composite telecom industry" can be done easily: The 1984 forecast contained an estimate of \$8.155 billion for the voice and data communications customer premise equipment (CPE) market. Subtracting this amount from the 1984 forecast yields a figure of \$22.709 billion for comparison with the 1985 forecast of \$23.634 billion, which contains no estimates for CPE.

Correlating the 1985 forecast with those of the previous monopoly years is considerably more difficult but not less important. Therefore, making a correlation that provides a clearer picture of spending in the new environment required the following steps:

- Adjusting the RBOC budgets of 1981-1983 to correspond to deregulation and post-divestiture conditions.

- Including Southern New England Telephone Co. and Cincinnati Bell with the Independents and similarly adjusting Independent spending from 1981-1984 to reflect their presence in this group.

- Grouping together the interexchange carriers and adjusting their consolidated spending from 1981-1983 to correspond to the deregulation and post-divestiture condition of AT&T Communications, formerly AT&T Long Lines.

The adjustments shed considerable light on the 1981-1983 RBOC budgets which showed a spending decrease of 18% for the period—from \$16.8 billion in 1981 to an estimated \$13.7 billion at the end of 1983. Actual spending in 1983 was \$13 billion, reflecting an actual decrease of 23%. This decrease is, however, artificial, because it relates to a share of the budget for "customer movement" or customer premise responsibility, an area affected by deregulation.

Spending for customer movement fell from 20% of the 1981 budget to a mere 4% of the 1983 budget. Adjusting these amounts out of the 1981-1983 budgets to match post deregulation and divestiture conditions reveals that the total remaining spending for the period decreased only 7%. The adjusted spending levels for 1981-1983 respectively were \$13.5 billion, \$13.6 billion and \$12.5 billion (Table 2).

The RBOCs spend \$13.1 billion for equipment and construction during 1984, an amount that is 6% less than the forecast of \$13.9 billion but a real increase of 5% over the adjusted spending level of \$12.5 billion in 1983. As the RBOCs move to provide equal access and accomplish other priority objectives in 1985, spending will increase by 9% to \$14.177 billion.

Spending will stabilize at an estimated \$14.3 billion in 1986.

Southern New England Telephone Co. and Cincinnati Bell arbitrarily have been grouped with the local exchange telephone companies that are not affiliated with post-divestiture Bell regional holding companies (RHCs). The 1981-1984 forecasts and spending levels have been adjusted to reflect their inclusion with the Independents. Based on preliminary reports, the Independents spent \$4.954 billion in 1984, 12.8% less than the forecast of \$5.586 billion. In 1985, Independent spending is expected to increase to \$5.439 billion, still some \$147 million less than the 1984 forecast amount. In 1986, Independents expect to spend \$5.738 billion.

The interexchange carrier market bustled with action during 1984. The major carriers reportedly spent \$500 million in a bare-knuckles advertising campaign to obtain or retain customers. Equal access became available in a few locations, providing the first real test under near-equal conditions of customer preference for a long distance company. And several hundred resellers continued their role as long distance retailers.

This forecast, however, focuses on some two dozen major interexchange carriers who already have or are constructing and expanding their own facilities. In 1984, these interexchange carriers spent \$3.7 billion on digital switches, the expansion of existing microwave routes with single sideband technology, construction of new digital microwave routes, satellite fa-

Table 2
Construction budgets: 1981-1986 (\$000,000)

	1986	1985	1984	1983	1982	1981
RBOCs						
ANIRITECH	2041.4 ^a	2010.4 ^a	1735.3 ^a	1804.0	1755.3	2019.5
Illinois	660.0	650.0	496.6	376.8	535.5	650.4
Indiana	225.0 ^a	212.0 ^a	200.9 ^a	189.5	184.3	201.9
Michigan	479.6	487.3	422.3	388.8	438.7	512.9
Ohio	468.0 ^a	442.0 ^a	417.5 ^a	389.8	407.8	450.1
Wisconsin	209.0	219.1	198.2	180.1	188.0	204.2
BELL ATLANTIC	2057.0	1973.0	1783.0	1875.6	2094.3	2220.7
CA	893.0	876.0	757.0	804.4	882.4	928.5
New Jersey	588.0	548.0	509.0	537.9	610.9	697.2
Bell of PA	576.0	549.0	517.0	533.3	601.0	643.0
BELLSOUTH CORP.	2380.9 ^a	2530.0	2340.4	2270.0	2749.8	3046.4
South Central	1080.9	1027.9	976.9	970.2	1228.1	1270.8
Southern	1300.0	1502.1	1363.5	1299.8	1521.7	1765.6
NTWEX CORP.	1837.6	1852.3	1848.8	2043.6	2158.3	2163.9
New England				829.5	886.3	728.9
New York				1214.1	1252.0	1435.0
PACIFIC TELESCOPE						
Pacific	2300.0 ^a	2156.3	1993.0	1821.0	2436.0	2757.0
SOUTHWESTERN BELL CORP.						
SW Bell	1930.0 ^a	1896.0	1780.0	1897.0	2294.6	2243.2
US WEST	1900.0 ^a	1821.1 ^a	1732.4	1965.7	2112.2	2380.7
Mountain				896.7	1172.9	1280.8
SW Bell				386.4	500.6	552.0
Pac NW				322.6	438.7	557.9
		Prior Divestiture Adjusted		12976.9 (471.2)	19400.5 (1987.22)	16047.4 (1345.4)
Historic Comparison TOTAL:	14286.7	14177.1	13053.1	12505.7	13615.3	15801.8
INDEPENDENTS						
QTE (Domestic)	2453.0	2365.0	2173.0	2099.0	2258.0	2327.0
United Telecom	578.1	594.5	537.0	486.0	525.5	580.0
Continental	449.1	470.9	474.3	463.3	430.5	407.3
Central Corp.	175.0 ^a	173.5	166.7	161.7	185.5	196.4
Altice Corp.	194.6	160.0	144.8	140.4	153.2	128.3
SUBTOTAL	3831.8	3763.9	3495.8	3310.5	3599.7	3637.3
Puerto Rico Tel	128.0	126.0	117.0	97.5	71.1	113.1
Rochester Tel	65.7	96.9	47.1	39.8	44.2	51.4
Century	41.7	41.3	37.3	41.9	54.4	28.6
Lincoln Telecom	23.0	34.3	30.9	31.2	35.4	37.0
TDS	26.0	29.5	28.5	31.0	26.1	24.5
SUBTOTAL	284.4	326.0	260.8	241.4	227.2	256.6
Commonwealth	28.0 ^a	27.0 ^a	24.0 ^a	20.8	14.1	12.5
Pacific Telecom	38.5	30.0	37.0	29.4	30.7	33.1
Anchorage Tel	29.8	36.2	40.3	30.1	38.1	22.4
Citizen Util.	32.0 ^a	30.5	27.1	24.6	30.5	34.9
Illinois Com.	13.9	17.4	13.4	11.4	22.8	26.0 ^a
SUBTOTAL	152.2	141.1	141.8	116.3	137.2	129.1
North State	6.0 ^a	6.0 ^a	5.0	6.5	5.6	6.6
Concord Tel	5.0	4.5	4.4	2.4	3.3	5.9
CP National	19.2	19.2	18.0	17.8	23.5	15.9
SUBTOTAL	26.2	29.7	27.4	26.7	32.4	28.4
So New England	98.0 ^a	100.0 ^a	95.0 ^a	88.9	83.0	122.5
Cincinnati Bell	93.0 ^a	81.0 ^a	61.0	49.7	78.3	116.1
SUBTOTAL	191.0	181.0	156.0	138.6	161.3	238.6
TOP 20 INDEP. TOTAL:	6475.6	6441.7	6081.8	5833.5	6102.8	6290.8
ALL OTHER INDEPENDENTS:	1262.4	997.3	872.2	1394.5	883.2	801.0
TOTAL INDEP. SECTOR:	5758.0	5439.0	4954.0	5128.0	4986.0	5091.0

RBOCs 1981-1983 construction budgets are adjusted to reflect divestiture.

^a Estimated by Telephony

cilities, fiber optic facilities and the like. The latter technology has stimulated frenzied activity, particularly with right-of-way companies like the railways, to acquire the real estate for terrestrial fiber optic links between all the major population centers in the United States.

Indeed, if all the announced fiber optic links—characterized by tremendous bandwidth—actually were to be installed, the competitive interexchange carriers might have to pay customers to make long distance calls! But there are long distances between a project announcement, installation and service availability. And the interexchange carriers, although willing to compete fiercely for customers, are unwilling to forecast spending more than \$4.018 billion in 1985 (Table 1). The portion attributable to the dominant carriers is shown in Table 3.

RBOC 1984 revenues, according to preliminary reports, fell 6%—from \$62.4 billion in 1983 to \$58.6 billion in 1984 (Table 4). The sharp increase of \$4.1 billion in RBOC operating expenses during the 1981-1983 period (Table 5) mainly is the result of transferring certain customer premise costs from the capital account to maintenance expense. The embedded CPE base has been assigned to American Telephone & Telegraph Co. (AT&T) and the net effect on RBOC operating expense for 1984 was not available for inclusion in this article. Independent operating results (Table 6) and other Independent figures still contain an unidentifiable amount for CPE. Deregulation of their CPE and its removal from the rate base is required by the end of 1987.

New days, new ways

Through these figures, 1984 emerges as a watershed year. The AT&T breakup coincided with the first real economic recovery since 1981. And the shock of divestiture was absorbed quickly, at least by the top management of the new regional Bell holding companies and AT&T—a fact that easily might be overlooked by focusing on some of the troublesome aspects of the transition.

The RHCs, indeed, pulled out all the promotional stops, seemingly intent on swiftly propelling the United

States into the information age. The network connection or gateway, of course, was to be the RBOCs. And the various lines of business, though structurally separated from the RBOCs, would nurture that connection.

The main target of this powerful promotional campaign was not the subscriber user but investors. The RHCs have placed top priority on guarding their financial flanks—a fact solidly substantiated both by operating results and the forecast.

In place behind all the promotional fervor are very tight financial controls and the priority projects are those that will maintain or increase revenues. This means business customers, especially the highly-visible large businesses which usually are clustered in small geographic areas. The RBOCs are bringing high-capacity digital services to their premises.

In the Midwest, for example, some \$840 million of Ameritech's 1985 construction budget of \$1.8 billion will be spent on fiber optic and T-carrier facilities—a 60% increase over the \$500 million spent in 1984. The percentage of digital switches in Ameritech's territory will increase from 3% currently to 31% in 1986; in the Bell Atlantic region, from 5% to 32%. And in Southern Bell's fast-growing region, the percentage of digital switches will increase from 3% in 1983 to 19% in 1985. Obviously, the RBOCs are installing technology where it counts the most.

New York Telephone, for example, derives 25% of its revenues from 1% of its business customers. Some 400 of the company's largest business customers and 5% of the next largest businesses account for approximately 70% of New York Tel's revenues. The company's territory includes lower Manhattan where the largest number of business customers are concentrated and the possibility of bypass is greatest. To serve them, New York Tel introduced packet switching in 1984, completed its fiber ring around Manhattan in 1983 and its video ring for both data and video in 1984. A 4 Mb/s (megabits per second) fiber optic facility also serves customers who need this kind of capacity.

Pacific Bell is approaching the Cal-

Continued on page 40

Table 3
Dominant Interexchange carriers (\$000,000)

	Revenues				Number of Installed Switches		
	Calendar 1984	% Mkt	Calendar 1983	% Mkt	1984	1983	1982
AT&T Comm.	35,000.0	88%	nc	91%	167	nc	nc
MCI	2,025.1*	5%	1,521.5	4%	118	98	75
GTE Sprint	1,267.4*	3%	740.0	2%	72	55	nc
Allnet	280.0*	-1%	181.1	-1%	30	27	8
UTC1	230.0	-1%	159.3a	-1%	10	nc	nc
	Construction Budget 1984	1984 Customers		% Business	Number of Employees 1984		
AT&T Comm.	1,100.0	87,000.0	9%	115,000			
MCI	1,050.0b	1,613.0c	19%	8,756c			
GTE Sprint	980.0	1,400.0	na	6,500			
Allnet	na	196.0d	47%	1,579			
UTC1	200.0	150,000.0	60%	2,300			

* estimated by Telephony

na not available

nc not comparable

a combined 1983 revenues of U.S. Telephone and United Telecom Communications, Inc. (UTC1)

b calendar year

c as of 3/31/84

d as of 9/30/84

Note: Other interexchange carrier revenues not included in this table are Satellite Business Systems (SBS) with revenues in 1983 of \$141.8 million; ITT/USTS, \$163.3 million and Western Union Long Distance Service, \$57 million. Their combined 1984 estimated revenues of \$475 million account for a 1% share of the 1984 market.

Table 4
RBOCs: Total revenues and local revenues versus toll distribution (\$000,000)

Distribution: Local & Toll Revenues						
Local Revenues		% Total Revenues	Services & Equipment	Public Phones	Message Charges	Private Lines
1983	30277.0	49%	84%	4%	9%	3%
1982	28960.0	48%	85%	3%	9%	3%
1981	25571.8	48%	85%	3%	9%	3%
Toll Revenues		% Total Revenues	Message Charges	WATS	Private Lines	
1983	29478.1	47%	67%	19%	14%	
1982	28669.7	48%	71%	16%	13%	
1981	26114.5	49%	74%	15%	12%	
Total Revenues		Toll Messages (000,000)	WATS Messages (000,000)			
1984	58600.0	na	na			
1983	62398.3	19000.4	7958.0			
1982	60050.4	18660.6	6456.8			
1981	53829.8	18061.7	5512.6			

Table 5
RBOCs: Operating expenses and
maintenance of shared expenses
(\$000,000)

	OPERATING EXPENSES			MAINTENANCE EXPENSES PER LINE		
	1983	1982	1981	1983	1982	1981
AMERITECH						
Illinois	1944.7	2029.1	1850.6	\$137	\$143	\$124
Indiana	604.9	603.0	556.0	137	141	128
Michigan	1544.4	1494.4	1402.7	141	134	125
Ohio	1257.3	1238.9	1138.4	141	143	134
Wisconsin	583.2	572.5	497.6	120	117	101
	5934.5	5937.9	5445.3			
BELL ATLANTIC						
C&P	2456.3	2362.1	2115.0	\$149	\$147	\$130
New Jersey	1730.8	1640.3	1418.1	145	143	128
Bell of PA	1832.5	1798.6	1565.2	115	112	106
	6019.6	5801.0	5098.3			
BELLSOUTH CORP.						
South Central	2913.6	2843.1	2625.4	\$157	\$160	\$155
Southern	4053.5	3879.0	3371.9	199	198	173
	6967.1	6722.1	5997.3			
NYNEX CORP.						
New England	2174.4	2068.0	1825.0	\$169	\$166	\$143
New York	4592.3	4433.4	3878.4	200	190	155
	6766.7	6501.4	5703.4			
PACIFIC TELESIS						
Pacific	5927.8	5788.9	5016.2	\$198	\$211	\$175
SOUTHWESTERN BELL CORP.						
SW Bell	5316.5	5243.0	4501.7	\$184	\$182	\$160
US WEST						
Mountain	2520.1	2442.2	2153.3	\$163	\$167	\$140
NW Bell	1402.1	1410.0	1301.4	125	125	118
Pac NW	1253.0	1176.6	1056.9	156	150	135
	5175.2	5028.8	4511.6			
SUMMARY:	OPERATING EXPENSES			MAINTENANCE EXPENSES ONLY		
	Total	% incr.		Total	% incr.	% Budget*
1983	\$42,107.4	+ 3%		\$14,407.1	+15%	34.2%
1982	41,023.1	+13%		12,534.4	+22%	30.6%
1981	36,273.8			10,309.7		28.4%

* Increase in operating expenses due primarily to customer premise responsibilities being moved from capitalized to (maintenance) operating expense during transition period prior to divestiture and deregulation.

ifornia market as though it were a new mother lode. And indeed, it is: If California were an independent nation, its economy would rank eighth on the world scale—just behind Italy and ahead of Canada. A total of 91% of its population lives in cities; approximately 20% of its over-25 residents have completed at least 4 years of college and 1 in 10 households already has a home computer.

To work this new "mine," Pacific Bell consumed half of AT&T's 1982 fiber optical production to construct a network for use during the Olympic games. But the game plan for this network extended far beyond the games: It now serves the major universities and businesses in the area and the company had 150 high capacity transport services (1.544 Mb/s networks) in operation at the end of 1984.

The RBOCs and the Independents (Table 7) are well on the way to fully digital networks. Unlike the RBOCs, Independents mainly are free to compete in the interexchange markets. Virtually every major Independent—GTE companies are a special case, because GTE acquired SPRINT from Southern Pacific—is competing or plans to compete for a share of this lucrative market. Typical of the announced plans are United Telecom's nationwide fiber optic network, the regional network of RCI, a Rochester Telephone Co. subsidiary and the regional network of LCI Communications, Inc., a company in which Alltel and Centel have a majority interest.

The five largest Independents (Table 1) account for 70% of Independent construction expenditures during the 1981-1986 period. Of their total 1985-1986 budgets, 51% will be spent for central office equipment, 33% for digital central office switches (Table 8).

For the RBOCs, the digital switching transition began later than it did for the Independents but RBOC progress is substantial. Before the decade ends, digital switches will be in place in every key location, whether RBOC or Independent.

Present but individually invisible in all of these figures are the more than 1400 small Independent telephone companies. While the RBOCs and

Continued on page 44

the large Independents have upped the stakes for any local network competitor or competing technology, these small Independents are playing grass roots America cards, the only cards they hold. Few of the small companies are directly threatened by bypass competition but all of them are affected indirectly. And the expected erosion of their revenue streams, as competition drives long distance toll pricing toward cost, concerns them mightily.

The result is that potential bypassers who may be attracted to alternate technologies must make some hard choices. The RHCs, RBOCs and large Independents can and will deploy whatever technology is needed to retain business customers and the small Independents will create local or national political flurries or storms to deter any mass exodus from the local exchange network. This convergence of interests between the large and small companies is the major impetus behind the recent United States Telephone

Assn.'s "unity" statement to which approximately 1250 companies already have subscribed.

Regulators, too, must come to terms with an industry that has its own ideas of how far and how fast prices can be driven to costs and, more importantly, who should pay for what.

Meanwhile, the RHCs, the RBOCs and the large Independents are competing with others and each other in many areas such as the sale of CPE, software, consulting services and the like. Multi-tenant services, for example, could become a billion dollar market by 1990 with both Independents and RHCs emerging as major players. In this submarket, pragmatism will triumph over principle. Both RBOCs and Independent telephone operating companies usually define multi-tenant services as invasions of franchised territory. Parent holding companies, however, have no qualms over directing a revenue stream into other channels if the alternative is losing it altogether.

"New" residential information services such as videotex, telebanking, teleshopping and the like continue to be long on promises and short on commercial fulfillment. Indeed, market performance figures are closely guarded secrets. But the appearance of such services usually is attended with great fanfare and followed by a deafening silence that says it all. Pilot projects are costly and pioneers are not storming this new frontier. The RBOCs, however, are making a strong case before the FCC for providing a local packet switched network and protocol conversion as a basic rather than fully-separated service.

Such a network service, they argue, is a prerequisite for home information services to become economically viable. The FCC has granted a waiver, permitting certain X.25- and X.75-based services but has delayed action on other important aspects of the waiver petition.

Videoconferencing is another service
Continued on page 48

Table 8
Top 20 Independents:
1981-1984 operating results (\$000,000)

	OPERATING REVENUES				OPERATING EXPENSES				TELECOM PLANT ASSETS			
	1984	1983	1982	1981	1984	1983	1982	1981	1984	1983	1982	1981
GTE (Domestic)	8900*	8369	7812	6864	6400*	5759	5193	4425	25448	24107	22448	20607
United Telecom	2109	1968	1829	1640	1683	1560	1451	1285	5718	5419	5192	4365
Continental	1557	1436	1332	1225*	1000	929	876	810*	4198	3982	3726	3420
Centel Corp.	771	720	691	634	494	458	443	128	1497	1493	1487	1434
Alltel Corp.	489	446	398	346	380	348	305	262	1610	1515	1410	1309
Puerto Rico Tel	350	354	296	248	259	237	218	193	1183	1105	1038	997
Rochester Tel	256*	238	222	205	141*	132	126	114	630*	606	582	564
Century	108	99	92	77	84	76	71	59	360	334	307	276
Lincoln Telecom	126	121	116	109	84	84	79	69	359	346	336	321
TDS	93	83	71	61	66	61	52	44	342*	298	271	221
Commonwealth	111*	98	82	74	98*	90	75	79	246*	226	209	192
Pacific Telecom	129	108	92	77	105	88	74	59	316	292	242	214
Anchorage Tel	99	91	73	65	75	68	62	57	172	157	157	132
Citizens Util.	98	81	69	60	29	26	23	20	275	257	236	206
Illinois Cons.	53	54	49	41	34	38	36	29	128	128	108	98
North State	35	33	27	23	19	18	16	14	81	77	72	68
Concord Tel	25	22	20	20	14	14	13	12	68	65	62	60
CP National	69*	62	54	33	43*	39	34	22	197*	185	173	154
So New England	1268*	1183	1081	1003	805*	765	745	664	2475*	2424	2341	2190
Cincinnati Bell	462*	428	397	357	298*	278	271	241	1010*	989	967	926

* estimated by Telephony

Table 7
RBOCs and Independents:
digital transition 1983-1986

ACCESS LINES (000):

	Installed Jan. 1	New & Replaced ----- % Base		Removed ----- % Base		Installed Dec. 31	% Digital -----
TOP 5 INDEPENDENTS:							
1986	20,326	2,735	13.1%	(2,312)	11.4%	20,749	48%
1985	19,926	3,056	15.3%	(2,656)	13.3%	20,326	37%
1984	19,334	2,323	12.0%	(1,731)	9.0%	19,926	24%
1983	19,033	1,655	8.7%	(1,354)	7.1%	19,334	14%
Subtotal:		9,769		(8,053)			
RBOCs:							
1986	92,027	10,052	10.9%	(7,615)	8.3%	94,464	22%
1985	89,394	8,676	9.7%	(6,043)	6.8%	92,027	13%
1984	86,779	6,918	8.0%	(4,303)	5.0%	89,394	4%
1983	84,961	6,596	7.8%	(4,778)	5.6%	86,779	-1%
Subtotal:		32,242		(22,739)			
TOTAL INDUSTRY:*							
1986	117,785	13,405		(10,407)		120,783	26%
1985	114,605	12,299		(9,119)		117,785	16%
1984	111,243	9,688		(6,326)		114,605	7%
1983	109,021	8,650		(6,428)		111,243	3%
Total:		44,042		(32,280)			

* top 5 independents and RBOCs account for 95% of U.S. access lines.

Estimate assumes 2.7% average annual net line growth over four-year 1983-1986 period. Of the 42 million lines added, 32.5 million (77%) will be digital.

CENTRAL OFFICE SWITCHES:

	Installed	New & Replaced		Removed		Installed	% Digital
	Jan. 1	-----		-----		Dec. 31	-----
			% Base		% Base		
TOP 5 INDEPENDENTS: HOSTS & REMOTES**							

1986	7,201	637	8.8%	(569)	7.9%	7,269	37%
1985	6,994	830	11.9%	(623)	8.9%	7,201	29%
1984	6,779	615	9.1%	(400)	5.9%	6,994	20%
1983	6,650	397	6.0%	(268)	4.0%	6,779	18%
		-----		-----			
Top 5 Total:		2,479		(1,860)			
RBOCs: HOST SWITCHES ONLY							

1986	9,258	968	10.5%	(1,061)	11.5%	9,165	24%
1985	9,299	623	6.7%	(664)	7.1%	9,258	13%
1984	9,418	293	3.1%	(412)	4.4%	9,299	7%
1983	9,509	292	3.1%	(383)	4.0%	9,418	3%
		-----		-----			
RBOCs Total:		2,176		(2,520)			

** top 5 independent figures show increase in installed base over 1983-1986 because hosts and remotes are included in count. Top 5 independents historically have represented 60% of independent installed switch base.

vice for which hopes are as high as the risks. Isacomm, Inc., a United Telecom company, for example, is investing approximately \$20 million up front in its video conferencing product called "The Meeting Channel."

The company's senior vice president, Anthony F. Zalenski, recently demonstrated the system to TELEPHONY and explained its relation to other United projects—the shared-tenant venture with Olympia & York and the nationwide fiber optic network. According to Zalenski, United's fiber optic network will lower video transmission costs at the same time the shared-tenant operations are expanding the number of video conferencing rooms.

This, complemented by current sales to very large companies and the advent of desk-top facilities, is expected to make videoconferencing a viable commercial service.

Cellular is now

Unlike new information services whose promises must be left for the future to judge, cellular mobile radio service is available now. The RHCs, the Independents, the radio common carriers (RCCs) the specialized common carriers (SCCs) and a host of other entrepreneurs were quick to recognize a once-in-a-lifetime opportunity.

When the Federal Communications Commission (FCC) announced that it would license only two providers—a wireline company and a non-wireline company—in each cellular metropolitan serving area (MSA), results were swift. Competing wireline applicants quickly formed alliances. And the FCC's lottery authority prodded the balky non-wireline applicants toward similar alliances.

In the top 30 MSAs, virtually all of the wireline systems and half of the non-wireline systems were in operation as 1984 ended. (Table 9.) In the 31-60 MSAs, all of the wireline systems are expected to be operational by the end of 1985 along with many systems in the 61-90 MSAs. The non-wireline systems in these markets will follow the same pattern, although some delays may occur in areas where applicants are slow to reach an accommodation.

The top 30 MSAs, many believe,
Continued on page 52

constitute approximately 65% of the total cellular market. If the estimate is accurate, it suggests that the 31-90 market is less attractive and that a below-90 market may not exist. The answers lie in the economic realities of production and consumption: How

far will equipment prices fall, once the top markets have justified mass production? When will calling traffic increase sufficiently to justify substantial price reductions which, in turn, will stimulate increased calling and so on? There are no easy answers

to these cellular questions.

Nor are there any easy telecommunications answers, if "easy" means a return to the stable ways of the former monopoly. Change, to compound the cliché, is upsetting!

Continued on page 54

Table 8
Estimated CO equipment (a) versus switch (b) spending (\$000,000)

TOP 5 INDEPENDENTS:

	1986		1985		1984		1983	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
GTE (Domestic)	1,300	793	1,253	764	1,130	689	1,009	646
United Telecom	324	226	327	219	269	172	258	165
Continental	169	142	169	142	166	139	222	176
Centel Corp.	81	72	85	71	85	77	86	78
Alltel Corp.	75	35	74	31	55	25	52	16
Subtotal:	1,949	1,268	1,908	1,227	1,705	1,102	1,627	1,081
% Budget (a):	51%		51%		49%		49%	
% Budget (b):		33%		33%		32%		33%

RBOCs CONSOLIDATED:

	1986		1985		1984		1983	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
	6,413	3,264	6,566	3,598	5,604	2,736	5,260	2,546
% Budget (a):	45%		46%		43%		42%	
% Budget (b):		23%		25%		21%		20%

TOTAL RBOCs & TOP 5 INDEPENDENTS:

	1986		1985		1984		1983	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
	8,362	4,532	8,474	4,825	7,309	3,838	6,887	3,627
% Budget (a):	46%		47%		44%		44%	
% Budget (b):		25%		27%		23%		23%

NOTE: RBOCs and TOP 5 INDEPENDENTS represent 91% of total independent and RBOCs spending over 1983-1986.

And even the monopoly's critics occasionally seem to be longing for the good old days.

This review and forecast, however, does not contain a nostalgia factor. The figures supplied by the carriers are sufficiently "self-checking" to make them authoritative. They reveal that competition, the objective that led to upsetting the old ways, is working, albeit imperfectly. Nevertheless, the market forces of supply and demand are more or less visible in all market segments.

The local exchange segment, for example, is a bastion of conservative management. In the years before and after divestiture, both RBOC and Independent budgets exceeded actual spending levels. Obviously, their budgets are not blank checks but a quantitative means of identifying and classifying potential projects. Just as obviously, continuous monitoring of the budgets is bringing projects into

near-real-time alignment with demand. Projects that can be deferred are being deferred. Consequently, spending is less than the budgeted amount.

The risk inherent in this process is the temptation to defer projects that really ought to be done. In 1985, such projects likely have higher priority and actual spending more closely may match budgeted amounts.

Nevertheless, the local exchange forecasts reveal a mature telecommunications network. There are no signs of explosive growth, runaway demand or the early emergence of significant new revenue streams. Instead, there are tight financial controls and a steady stream of rate increase requests before the appropriate regulatory bodies.

The business plan is clear: Minimize costs. Maximize revenues. Bombard the court and the regulators with requests for waivers to every

condition that puts the local exchange network at a competitive disadvantage and, through separate subsidiaries, pursue opportunities forbidden to the RBOCs.

Even in the partially deregulated interexchange market segment, no carrier is pinning its hope for success on market growth alone. Each one expects a share of the growth, of course, but the primary objective is a greater share of AT&T Communications' market. AT&T's objective is keeping its market share and shedding its competitive handicap. The Independents who are planning regional networks that include their own local exchanges have reduced their risks while increasing their chances of success: Much of their locally generated toll traffic will flow to the regional network.

Telecommunications equipment suppliers, for most of whom competi-

Continued on page 56

Table 9
Top 30 U.S. cellular markets: a progress report

MSA Rank	CITY	WIRELINE LICENSE		Start Date	SWITCH	WIRELINE LICENSE	NONWIRELINE LICENSE	MSA Rank	CITY	WIRELINE LICENSE		Start Date	SWITCH	WIRELINE LICENSE	NONWIRELINE LICENSE
		Wireline License	Nonwireline License							Wireline License	Nonwireline License				
17	ATLANTA	BellSouth Mobility		84 20	Motorola	EMX 250		21	MILWAUKEE	Ameritech Mobile		84 30	AT&T Autoplex 100		
		GenCell								Milwaukee Tel. Co.		84 20	Motorola	EMX 250	
14	BALTIMORE	Bell Atlantic Mobile		84 20	AT&T Autoplex 100			15	MINNEAPOLIS	NewVector		84 20	GE-Northern Telecom		
		Wash-Balt Cellular		83 40	Motorola	EMX 250				MCI/Cellcom		84 30	NEC NEAX 61		
6	BOSTON	Nynex Mobile		84 40	AT&T Autoplex 100			29	NEW ORLEANS	BellSouth Mobility		84 30	AT&T Autoplex 10		
		Yankee Celltel		84 40	Motorola	EMX 250				Radiofone		*	Motorola	EMX 250	
25	BUFFALO	Nynex Mobile		84 20	Motorola	EMX 250		1	NEW YORK	Nynex Mobile		84 20	AT&T Autoplex 100		
		Buffalo Tel. Co.		84 20	Ericsson	AXE 10				Cellular Telephone Co.		85 30			
3	CHICAGO	Ameritech Mobile		83 40	AT&T Autoplex 100			4	PHILADELPHIA	Bell Atlantic Mobile		84 30	AT&T Autoplex 100		
		Rogers Radiocall		85 10	Ericsson	AXE 10				AWACS		85 30			
23	CINCINNATI	Ameritech Mobile		84 40	AT&T Autoplex 100			26	PHOENIX	NewVector		84 30	GE-Northern Telecom		
		Southern Ohio Tel.								Metro Mobile					
16	CLEVELAND	GTE Mobilnet		84 30	Motorola	EMX 250		13	PITTSBURGH	Bell Atlantic Mobile		84 40	AT&T Autoplex 100		
		Northern Ohio Cellular		85 10	GE-Northern Telecom					MCI		85 10			
9	DALLAS	SW Bell Mobile		84 30	AT&T Autoplex 100			30	PORTLAND	GTE Mobilnet		84 30	Motorola	EMX 250	
		Metroplex		*	Ericsson	AXE 10				Interstate		85 10	Motorola	EMX 250	
10	DENVER	NewVector		84 40	GE-Northern Telecom			11	ST. LOUIS	SW Bell Mobile		84 30	AT&T Autoplex 100		
		MCI/McCaw		*	NEC NEAX 61					CyberTel		84 30	Motorola	EMX 250	
5	DETROIT	Ameritech Mobile		84 30	AT&T Autoplex 100			18	SAN DIEGO	PacTel Mobile		85 20	Motorola	EMX 250	
		Detroit Cellular		85 10	Ericsson	AXE 10				GenCom					
10	HOUSTON	GTE Mobilnet		84 20	Motorola	EMX 250		7	SAN FRANCISCO	GTE Mobilnet		85 10	Motorola	EMX 250	
		Houston Cellular		85 30	Motorola	EMX 250				Bay Area Cellular		85 20	Motorola	EMX 250	
28	INDIANAPOLIS	GTE Mobilnet		84 10	Motorola	EMX 250		27	SAN JOSE	GTE Mobilnet		85 10	see San Francisco		
		Indianapolis Telephone		84 10	Motorola	EMX 250				Bay Area Cellular		85 20	see San Francisco		
24	KANSAS CITY	SW Bell Mobile		84 30	Motorola	EMX 250		20	SEATTLE	NewVector		84 30	GE-Northern Telecom		
		MCI/McCaw/MidAmerica		*	NEC NEAX 61					Interstate		85 10			
3	LOS ANGELES	PacTel Mobile		84 30	AT&T Autoplex 100			22	TAMPA	GTE Mobilnet		84 30	Motorola	EMX 250	
		LA Cellular Telephone			awarded 12/4/84					Bayphone of Tampa		*	Motorola	EMX 250	
12	MIAMI	BellSouth Mobility		84 30	AT&T Autoplex 100			8	WASHINGTON	Bell Atlantic Mobile		84 20	see Baltimore		
		Florida Cellular		*	Anaconda Ericsson					Wash-Balt Cellular		83 40	see Baltimore		

* proposed switch in FCC filing.

tion is not new, have a well-defined carrier market of some \$23.634 billion. However, this glittering target has attracted worldwide competitors as a flame attracts moths. For many products, therefore, competition has created a buyer's market.

The fierce competition for the CPE segment, for example, has lowered prices to the hang-on-for-dear-life level. The RBOCs have rejuvenated Centrex, making it competitive in features and price with PABXs. And the mass media has been filled with retailer ads, aimed at moving a stagnant

inventory of telephones, cordless phones and the like off their shelves. Central office digital switches have been offered at a price-per-line that is reminiscent of the years-ago rule of thumb for step-by-step systems.

Telecommunications competition clearly is going about its business: Except where regulation says otherwise, competition is driving prices toward costs and shifting costs to cost causers. It is challenging projects, comparing them with demand, approving some and deferring others. It is redistributing market share and

shifting some responsibilities to the customer. It is creating and closing markets, evaluating suppliers (Table 10) and correcting over- and under-supply. And it is challenging the traditional players as well as new entrepreneurs.

Whether or not telecommunications ought to be doing all these things and whether or not the new order ultimately will be better than the old are questions open to debate. Meanwhile, telecommunications is doing them, and though inexperienced, doing them quite well. □

Table 10
Large user impressions of interexchange carriers*

	AGGRESSIVE MANAGEMENT	BACKUP SERVICE	COST COMPETITIVE	SERVICE QUALITY	SEE AS INTERNATIONAL
Allnet	57%	42%	56%	46%	2%
Argo Communications	33%	27%	31%	26%	3%
AT&T Communications	71%	81%	53%	85%	32%
GTE Sprint	67%	58%	68%	58%	13%
ITT/USTS	45%	44%	47%	45%	12%
MCI	84%	63%	72%	58%	19%
Satellite Business Sys.	57%	46%	51%	48%	12%
UTC (U.S. Telephone)	44%	41%	44%	39%	5%
Western Union Long Dist. Serv.	38%	37%	42%	37%	6%

NOTE. Respondents were asked to give their impression of the interexchange carriers in each category using the scale: 3 - Excellent, 2 - Average, 1 - Poor.

* based on 150 responses from the headquarters of Fortune 1000 Industrials, Fortune 400 Service Organizations and universities with over 2,500 students.